SONY

3-751-465-21 (2)

Stereo Cassette Deck

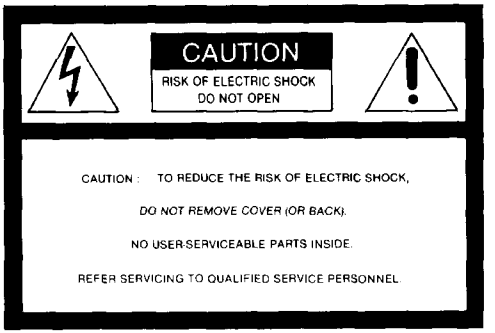
Operating Instructions

TC-RX70ES

© 1990 by Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. TC-RX70ES Serial No._____

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

NOTICE FOR CUSTOMERS IN THE UNITED KINGDOM

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

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Features

The TC-RX70ES is a quick auto-reverse cassette deck equipped with a laseramorphous magnetic alloy head and LC-OFC winding for recording and playback. It comes with following features:

- **B and C type Dolby NR systems** to reduce tape hiss.
- **The Dolby HX PRO* system** which improves the linearity of the tape's high-range response during recording.
- **Easy-to-read digital linear counter** which shows the elapsed recording or playback time.
- **AMS and memory play functions** which provide easy access to a desired position.
- **Automatic recording level adjustment** for one-touch protection against distortion.
- **Fade-in and fade-out functions** to start and end recordings with a professional touch.
- **Automatic switching between line and microphone input** when recording with a microphone.
- **Cassette stabilizer** which guarantees vibration-free tape operations for higher sound quality.
- **Display mode button** which allows you to select normal display, counter only or display off.
- **Timer-activated play and recording** with an optional timer.
- **An optional remote control unit** to enable various operations to be remotely controlled.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Precautions

On safety

- Operate the unit only on 120 V AC, 60 Hz (U.S.A. model) or 240 V AC, 50 Hz (U.K. model)
- Should anything fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.

On operation

- When the unit is not being used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The heads and tape path should be cleaned after every 10 hours of operation. Dirty heads and a dirty tape path may cause:

Loss of high-frequency response
Loss of sound volume
Sound drop-out

If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

Note on cassettes longer than 90 minutes

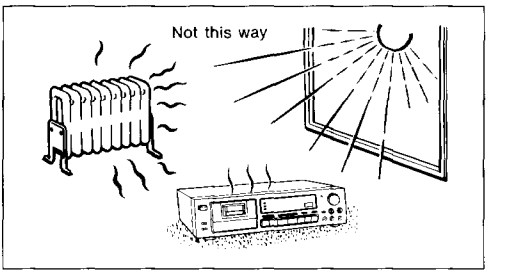
The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

Installation

Notes on Installation

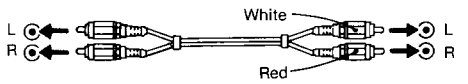
- Place the unit in a location with adequate air circulation to prevent internal heat build-up in the unit.
- Do not place the unit:
  - —near heat sources such as radiators or air ducts.
  - —in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
  - —in an inclined position.
  - —on a soft surface, such as a rug, that would block the ventilation holes on the bottom.
- Do not throw away the carton and packing material. They will come in handy when transporting the unit or shipping it for servicing.



Connections

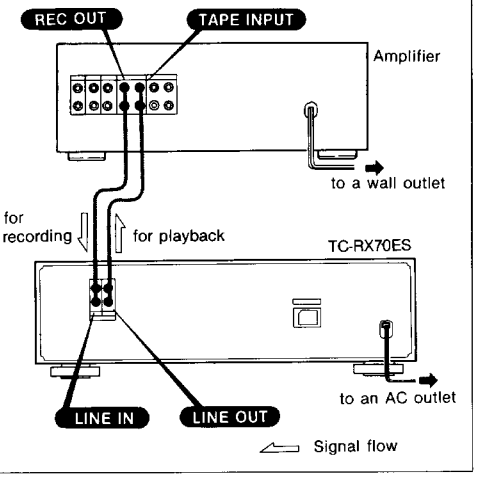
Notes on Connections

- Turn off the power to all equipment before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.



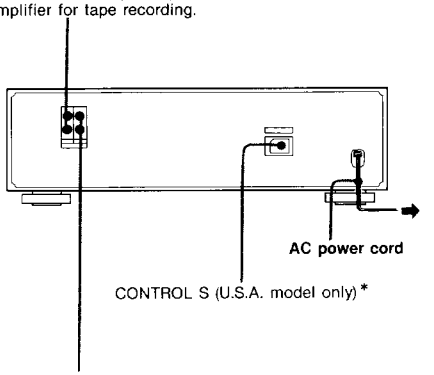
- The connecting cords should be fully inserted into the jacks. A loose, connection may cause hum pick-up.

Basic Connection



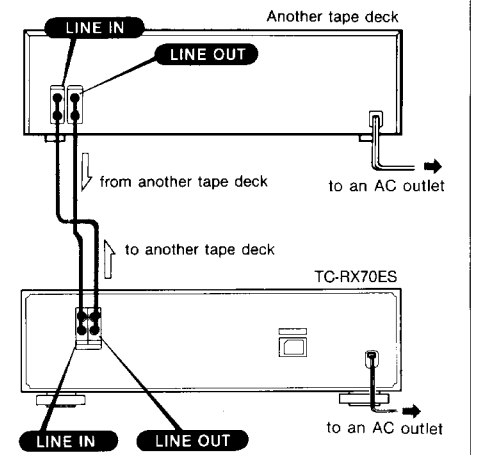
Identification of Rear Panel Parts

LINE IN (line input) jacks (phono jacks)
Connect to the tape outputs (recording outputs) of an amplifier for tape recording.



LINE OUT(line output) jacks (phono jacks)
Connect to the tape inputs of an amplifier for playback.

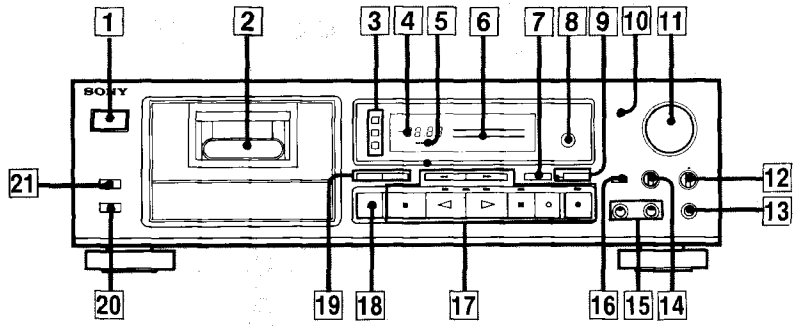
Connection for tape dubbing



*** Note on the CONTROL-S input**
To remote control this unit through a receiver or amplifier, connect the input on this unit to the CONTROL-S output on a Sony receiver or amplifier, with a CONTROL-S cable. When this connection is used, only remote commands sent through the receiver or amplifier will be executed. The remote sensor on this unit will not function.

Identification of Front Panel Parts

Refer to the pages indicated in ● for details.



1 **POWER switch**

2 **Cassette holder**

3 **TAPE TYPE indicators**

4 **LINEAR COUNTER** ⑨

5 **MEMORY indicator**

6 **PEAK LEVEL METER** ⑬

7 **FADER button** ⑪

8 **Remote control sensor**
You can control this cassette deck remotely with:
—Any remote commander (supplied with a Sony amplifier or receiver) which is marked with the R logo and has cassette deck control capability.
—An optional Sony remote commander with the R logo.

9 **AUTO REC (automatic recording) LEVEL button and indicator** ⑬

10 **DISPLAY MODE button** ⑦

11 **REC LEVEL (recording level) control** ⑬

12 **BALANCE control**

13 **HEADPHONES jack (stereo phone jack)**

14 **DOLBY NR (Dolby noise reduction) switch** ⑦ ⑪

15 **MICROPHONE jacks (phone jacks)** ⑩

16 **MPX FILTER button** ⑪

17 **Tape operation buttons and direction mode, REC and PAUSE indicators**
◀◀ (leftward fast winding) button
▶▶ (rightward fast winding) button
▶ (forward play) button
◀ (reverse play) button
■ (stop) button
II (pause) button
O REC MUTE (record muting) button ⑫
● REC (record) button

18 ⏏ **OPEN/CLOSE button**

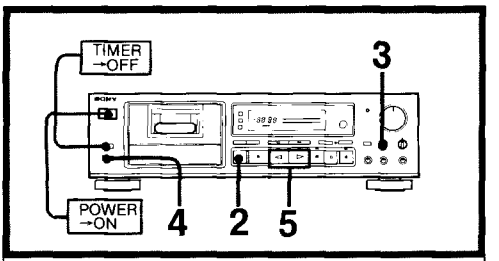
19 **COUNTER RESET and MEMORY buttons** ⑨

20 **DIRECTION MODE switch** ⑦ ⑩

21 **TIMER switch** ⑩

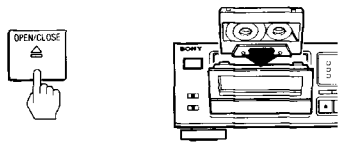
Playing Back a Tape

Set the amplifier's function to tape monitor.

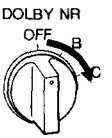


1 Turn on the amplifier and select the tape function.

2



3 Set the DOLBY NR switch to the same position that was used when the cassette was recorded.

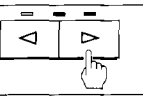
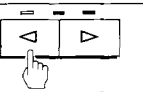


4 *Select the direction mode.*

To playback one side	
To playback both sides	
To playback both sides continuously*	

* After playing back five times, the deck automatically stops.

5

From the front side	
From the reverse side	

To stop playback, press ■.
To stop playback momentarily, press ❚❚.
To restart play, press ❚❚, ◀, or ▶.
To fastwind a tape rightward, press ▶▶.
To fastwind a tape leftward, press ◀◀.

How to use the DOLBY NR switch
Set the DOLBY NR switch to the same position (B, C, or OFF) as was used when recording the cassette.

Use the DISPLAY MODE button to select the display mode
You may choose among three display modes by pressing the DISPLAY MODE button: (1) the whole is displayed; (2) only the linear counter is displayed; or (3) no display.

What is Dolby NR system?
The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals. The system boosts these signals in recording and lowers them in playback.

Is it necessary to set a switch for the tape type being used?
No. Because an automatic tape type detection system is used. This system adjusts the equalization and bias current setting to the optimum levels according to the type of cassette detected, NORMAL, CrO_2, or METAL. When the cassette is inserted, the corresponding tape type will be displayed.

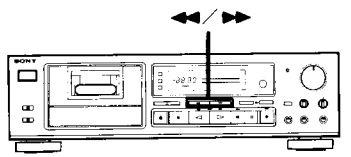
The TIMER switch must be set to OFF because...
Otherwise, when the power is turned on, recording or playback will start automatically in a few seconds.

To change to recording mode during playback
Keeping ▶ pressed, press ●. The unit immediately switches from playback to recording without stopping the tape. This is *useful when editing previously recorded material.*

To start operations while the cassette holder is open
Operations may be started while the cassette holder is open. For example, when ▶ is pressed while the cassette holder is open, the cassette holder will close and playback will start. Similarly, pressing ◀◀, ▶▶, or ❚❚ while the cassette holder is open will close the cassette holder and start the respective operation.

Note
The Dolby HX PRO system is effective only during recording, not during playback.

Locating the Beginning of a Selection During Playback —Automatic Music Sensor (AMS)



During playback, check the direction indicator and press ▶▶ or ◀◀ referring to the following table.

Indicator	Desired selection	
	Next selection	Selection being played
	▶▶	◀◀
	◀◀	▶▶

The PLAY indicator blinks while the AMS searches for the beginning of the selection.
After locating the beginning of the selection, playback will start automatically.

What is the AMS?
The AMS detects the blank space between selections and locates the beginning of a selection during playback. To ensure correct operation of the AMS, there must be a blank of four seconds or longer between selections.

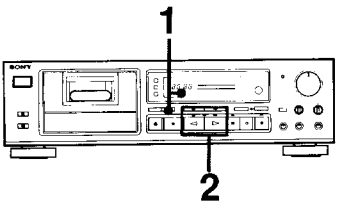
If the ▶▶ or ◀◀ button is pressed immediately before the following selection
The AMS may skip the next selection and locate the beginning of the one which follows it.

The AMS deactivates at the end of a tape
When no blank is detected, the AMS will deactivate at the end of a tape even if the direction mode switch is set to continuously play (⊂⊃).

The AMS may not operate
If there is noise in the space between selection.
If the space is less than 4 seconds long.

The AMS will treat the following as blanks:
a long pause in the music
a passage of low frequencies or very low volume
a gradual increase or decrease in volume

Starting Playback Automatically after Fast Winding—Auto Play



1 Check that the MEMORY function is deactivated.
If the MEMORY indicator is on, press the MEMORY button to deactivate the function.

2

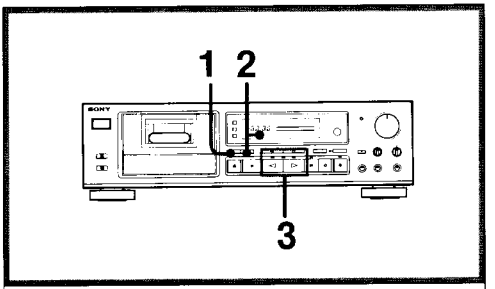
To start automatic playback from the beginning of the front side:	While holding down ◀, press ▶▶.
To start automatic playback from the beginning of the reverse side:	While holding down ▶, press ◀◀.

Be sure to turn off the MEMORY indicator before starting Auto Play
If the MEMORY indicator is displayed, press the MEMORY button to turn off the indicator. Otherwise, the tape will be rewound to around 0.00 and playback will start.

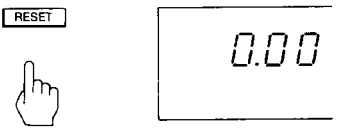
Is it necessary to set the tape type being used?
No. Because the deck has an automatic tape type detection system. Of the four major types of tapes, your unit can use Type I (normal), Type II (CrO_2) and Type IV (metal). The tape detection system automatically adjusts the equalization and bias current to the optimum level for the type of cassette detected. The tape type is indicated by the TAPE TYPE indicator.
The characteristics of cassettes may differ slightly depending on the make or grade. The following table shows the classification of Sony cassette tape:

Tape type	Tapes (C30 – C90)
Type I (Normal)	SONY: EF, HF, HF-S, HF-ES Other TYPE I equivalent tapes (For 120 μs EQ, NORMAL BIAS)
Type II (CrO_2)	SONY: UX, UX-S, UX-ES, UX-PRO Other TYPE II equivalent tapes (For 70 μs EQ, HIGH BIAS)
Type IV (Metal)	SONY: METAL-ES Other TYPE IV equivalent tapes (For 70 μs EQ, METAL BIAS)

Locating a Desired Position Using the Counter—Memory Play



1 At the desired position during playback.



2

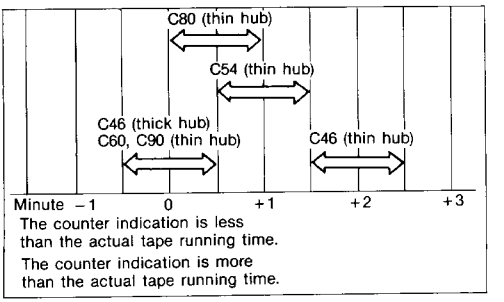
3 When you want to return to the desired point during playback, **press the following:**

Direction Indicator	Operation
	Press ▶ and ◀◀
	Press ◀ and ▶▶

If you press only the ◀◀ or ▶▶ button, the tape will be rewound and the unit will stop when the counter reaches 0.00 (Memory stop).

The Accuracy of the Digital Linear Counter

This counter is not a digital clock, and thus the indicated number will not exactly equal the actual elapsed time. The difference between the number and the elapsed time will vary depending on the type of tape being used. This counter has been designed using Sony cassette tapes as a standard.



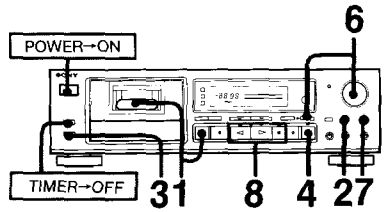
Note

You may want to check the accuracy of the counter when using cassette tapes other than Sony's or tapes of a special length.

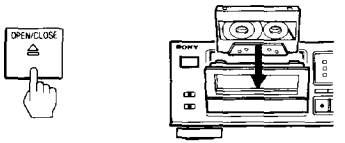
Do not turn the power off while using the counter

Turning the power off, then on again resets the counter to 0.00.

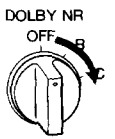
Recording on a Tape



1



2 Select the Dolby NR setting.



3 Select the side(s) to be recorded.

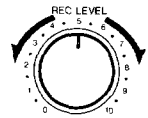
To record on one side	
To record on both sides	

4

The unit will enter recording pause mode.

5 Play the program source to be recorded.

6 Adjust the recording level.



See Adjusting the Recording Level Manually on page 13.

See Adjusting the Recording Level Automatically on page 13.

7 Adjust the balance.

8

To record on the front side of the cassette	
When ▷ is on	Press ▶ once or ❚❚
When ◁ is on	Press ▶ twice
To record on the reverse side of the cassette	
When ◁ is on	Press ◀ once or ❚❚
When ▷ is on	Press ◀ twice

To stop recording, press ■.

The TIMER switch must be set to OFF because...
Otherwise, when the power is turned on, recording or playback will start automatically in a few seconds.

To start recording while the cassette holder is open
If you press the REC ● button while the cassette holder is open, the holder will close automatically and the unit will switch to recording standby mode. This function allows you to start recording at a moment's notice.

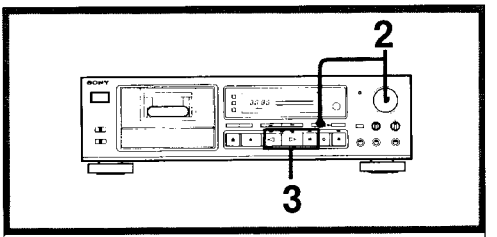
Note on step 4
A blinking indicator ◁ or ▷ indicates that recording is possible on that side.
If the cassette tab has been removed to prevent accidental erasure, the indicator will blink only for the side that can be recorded. If both tabs have been removed, there will be no response even when ● is pressed.

The ⏏ button is inoperative during recording
When the unit is recording or in record pause mode, the ⏏ button will be disabled. To open the cassette holder, press ■ first.

When recording with the microphone
Adjust the recording level as you would when recording from other sources. Note that no other source can be recorded when the microphone is connected, so be sure it is unplugged when recording from a different source.

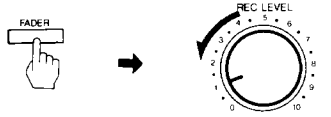
Even at the ⇄ position
Even at the ⇄ position, recording automatically stops when the tape reaches the end of the reverse side.

Starting a Recording with Fade-in



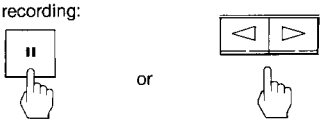
1 Perform steps 1 through 7 on page 10 for normal recording

2



The FADE indicator turns on and the REC LEVEL control rotates downward.

3 To start recording:



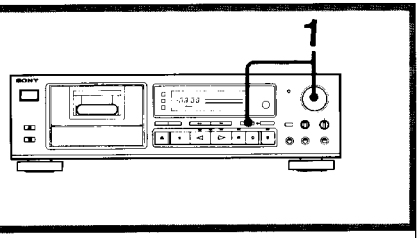
The FADE indicator blinks and the REC LEVEL control rotates upward to produce a fade-in effect on the tape.

If the REC LEVEL control is set to zero
There will be no fade-in on fade-out effect recorded on the tape.

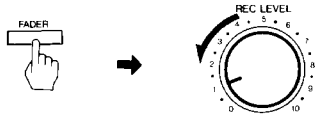
If the REC LEVEL control is set to 10
The REC LEVEL control may not return exactly to its original position after fade-in or fade-out recording is completed. However, the recording level will be equivalent to the original setting of 10.

When recording FM broadcasts with Dolby NR
Set the MPX FILTER switch to ON when you record FM broadcasts with Dolby NR. If the switch is set to ON, the MPX filter activates to cut off any remnants of the 19kHz stereo carrier and 38kHz subcarrier signals, which may otherwise interfere with proper operation of the Dolby noise reduction. However, setting this switch to ON is not a must because almost all high-performance tuners incorporate such filters which adequately remove those signal components from the output.
So, set the switch to ON only if the tuner is not equipped with this filter or the equipped filter is insufficient (if you notice sound degradation when recording with Dolby NR).
Note that the MPX FILTER switch does not function even if you set it to ON, as long as the DOLBY NR switch is OFF.

Ending a Recording with Fade-out



1 During recording:

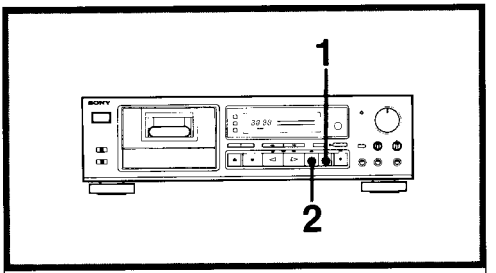


The FADE indicator turns on and the REC LEVEL control rotates to zero to create a fade-out effect on the tape.

After the REC LEVEL control reaches zero, the FADE indicator turns off, the REC LEVEL control returns to its original position, and a 4-second blank is created on the tape.

Inserting a Blank Space during Recording—Record Muting

During recording, you can insert a blank space on the tape. This space will let you locate a selection using the AMS function (see page 8). In addtion, this function enables you to eliminate unwanted input by replacing it with a blank space.

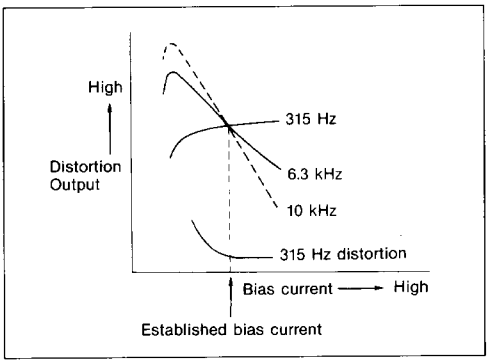


1 While recording, press ○.
If you want the blank to be four seconds long, press ○.
The ● indicator starts to flicker. While the indicator is flickering, no incoming signals are recorded on the tape. Then, after four seconds, the ❚❚ indicator lights up and the unit enters the recording pause mode.

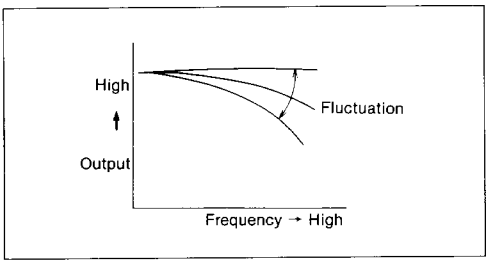
2 Press ❚❚ to resume recording.

What is the Dolby HX PRO System?

The Dolby HX PRO system provides improved linearity in high-range frequency response during recording. Tapes recorded with this system retain the same high quality even when played back on other tape decks.



As shown above, characteristics such as output level and distortion differ widely according to the bias (high-frequency) current. In conventional system, the bias current is susceptible to variations in certain recording signals (see diagram below), and this can cause fluctuations in frequency response, distortion, or other unwanted characteristics.

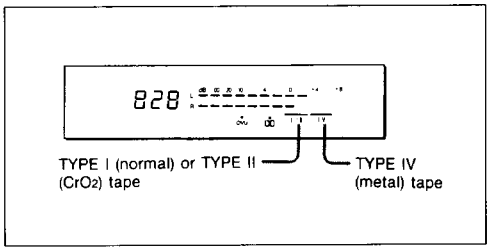


With the Dolby HX PRO system, the effective bias amount added to the bias current is controlled in millisecond units to greatly reduced distortion, improving linearity in high-range response and ensuring high-intensity recording with minimal distortion and noise.

Adjusting the Recording Level Manually

The optimum recording level, which differs according to the tape type, is indicated on the PEAK LEVEL METER for each tape type.
Adjust the REC LEVEL control as high as possible without exceeding the recommended range for the tape type being used.

Recommended maximum PEAK LEVEL METER reading



Tips on recording level adjustment

- Adjust the recording level as high as possible without causing distortion in the recorded sound.
  If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

Adjusting the Recording Level Automatically

The Automatic Recording Level function automatically adjusts the recording level to suit the higher volume range of the source material. Since gradual adjustments are made in the recording level during the recording, distortion and noise is minimized whenever a high-volume section is encountered.

Press the AUTO REC LEVEL button. The AUTO REC LEVEL and REC LEVEL control indicators blink and the REC LEVEL control automatically rotates to the proper recording level. The REC LEVEL control indicator stops blinking when the automatic recording level has been set. The automatic recording level function is deactivated by pressing the AUTO REC LEVEL button or by manually turning the REC LEVEL control.

Tips on recording level adjustment
The optimum recording level can be obtained by first activating the AUTO REC LEVEL button and playing the sections in the source material with the highest volume (or better yet, the entire source material). This will allow the Automatic Recording Level function to adjust the recording level to a position most suitable for the higher volume levels.

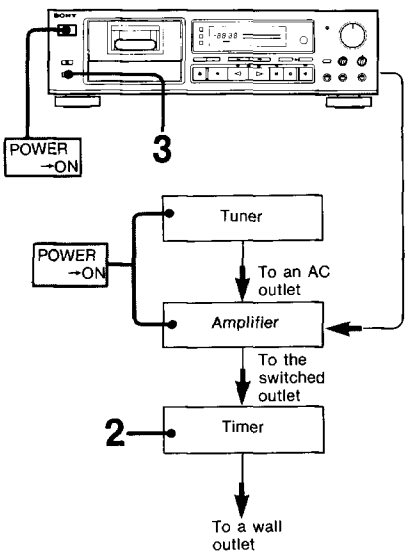
The Automatic Recording Level function may not be able to set the proper recording level in the following cases:

- When the source input contains noise, such as that caused by dust on a record, a record needle, or noise from a radio reception.
- During passages of low-volume sound, such as pianissimos in classical music. If later passages contain high-volume sound, the Automatic Recording Level function should be used to set the recording level for those passages.
- When proper adjustment is not possible due to the high-volume sound produced through the graphic equalizer.

In these cases, manual recording level adjustment is recommended.

Timer-Activated Playback and Recording

By connecting an optional timer, recording or playback can be performed automatically at a preset time.



1 Insert a cassette and prepare the unit for playback or recording.

For playback	Follow steps 1 through 4 on page 7.
For recording	Follow steps 1 through 7 on page 10.

2 Set the timer to the desired time.

3 Set the unit's TIMER switch to PLAY or REC.

Playback or recording will start at the preset time.

Automatic recording level adjustment and fade-in during time-activated recording
When the REC LEVEL control is set to zero, the Automatic Recording Level function is automatically activated at the start of time-activated recording. If the optimum recording level is set, then fade-in will automatically be activated when time-activated recording begins.

When the timer-activated operation is completed
Set the TIMER switch on the unit to OFF. If the TIMER switch is left at REC, the unit will automatically enter the recording mode the next time the power is turned on, and the previously recorded material may be erased.

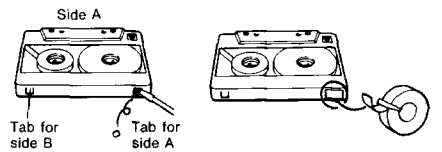
Keep the POWER switch depressed on the unit
When the timer is set, the power to the unit will be cut off. However, you must leave the POWER switch depressed to start timer-activated operation.

Check the side of the cassette to be played back or recorded before setting the timer.
The timer-activated operation starts from the side of the cassette used when the power was turned off.

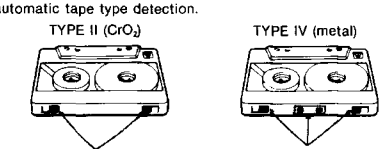
Notes on cassettes

To protect a recording on side A or B
Break out the respective tab.

To recover a cassette for recording
Cover the respective slot with tape.



When using Type II (CrO_2) or Type IV (metal) cassettes
Be careful not to cover the detector slots which are necessary for automatic tape type detection.



Cassette care

- Avoid touching the tape surface of a cassette, as to prevent contamination of the heads by dirt, dust or oil on the skin.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion of the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.

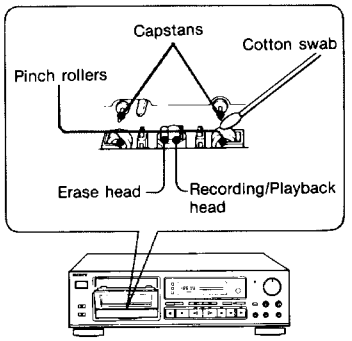
Maintenance

Cleaning the Heads and Tape Path

Clean all surfaces over which the tape travels after every ten hours of operation. To obtain high-quality recording sound, however, cleaning before every recording is recommended.

1 Press ⏏ to open the cassette holder.

2 Wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with cleaning fluid or rubbing alcohol.



After cleaning the heads and tape path, do not insert a cassette until the areas cleaned are completely dry.

Demagnetizing the Heads

The heads will become gradually magnetized over an extended period of use, causing hiss and loss of high frequencies. To avoid this, demagnetize the heads and all metal parts in the tape path using a commercially available head demagnetizer.
Make sure that the unit is turned off during the demagnetizing operation.

Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvents such as alcohol or benzine.

Specifications

Recording system 4-track 2-channel stereo
Fast winding Approx. 90 sec. (with C-60 cassette)
Bias AC Bias
Signal-to-noise ratio (NAB, at peak level)

DOLBY NR switch / Cassette	OFF	B-TYPE ON	C-TYPE ON
Type IV (Sony METAL-ES)	59 dB	67 dB	74 dB
Type II (Sony UX-S)	58 dB	66 dB	73 dB
Type I (Sony HF-S)	56 dB	64 dB	71 dB

Total harmonic distortion
1.0 % (with Sony METAL-ES cassettes)
Frequency response
DOLBY NR OFF
- With Type IV cassette (Sony METAL-ES)
  20 – 20,000 Hz (±3 dB)
  30 – 15,000 Hz (±3 dB, 0VU recording)
- With Type II cassette (Sony UX-S)
  25 – 17,000 Hz (±3 dB)
  15 – 18,000 Hz
- With Type I cassette (Sony HF-S)
  25 – 16,000 Hz (±3 dB)
  15 – 17,000 Hz

Wow and flutter 0.06% WRMS (NAB)
Inputs Microphone inputs (phone jacks)
Sensitivity 0.25 mV (–70 dB)
For a low-impedance microphone
Line inputs (phono jacks)
Sensitivity 77.5 mV (– 20 dB)
Input impedance 47k ohms
Outputs Line outputs (phono jacks)
Output level of 0.44 V (–5 dB) at a load impedance of 47k ohms
Load impedance of over 10k ohms
Headphones output (stereo phone jack)
Output level of –28 dB at a load impedance of 8 ohms

General
Power requirements
120 V AC, 60 Hz (U.S.A.)
240 V AC, 50 Hz (U.K.)
Power consumption
23 W
Dimensions Approx. 430 × 123 × 285 mm (w/h/d)
(17 × 4⅞ × 11¼ inches)
including projecting parts and controls
Weight Approx. 4.6 kg (10 lbs 3 oz)
Supplied accessory
Connecting cord (2)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.
Before proceeding with these trouble checks, first check these basic points:

- The power cord is firmly connected.
- Amplifier connections are firmly made.
- Heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are set correctly.

Function buttons and tape transport problems

Symptom	Cause	Remedy
The function buttons do not activate.	Cassette holder is not fully closed.	Close the holder completely.
	Cassette is not properly inserted.	Insert cassette correctly.
	Button pressed immediately after power was turned on.	Wait until ▮▮ indicator stops blinking.
Playback or recording begins when the power is turned on.	The TIMER switch is not set to OFF.	Set the TIMER switch to OFF.
● button does not activate. (● indicator does not light up.)	No cassette in the holder.	Insert a cassette.
	Tab has been removed from the cassette.	Cover the hole with plastic tape (page 14).
Tape stops before being fully rewound.	Tape is slack.	Take up the tape slack.
	Cassette shell is deformed.	Use another cassette.
	The Memory function is activated.	Press the MEMORY button to deactivate the function.
Excessively loud tape transport noise during fast winding.	This depends on the cassette used and is not a problem.	—
The cassette holder does not open.	The unit is turned off.	Turn the unit on.

Recording and playback problems

Symptom	Cause	Remedy
Recording or playback cannot be made or there is a decrease in sound level.	Heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection	Make connections properly.
	Improper setting of the amplifier controls.	Set the amplifier controls to the appropriate positions.
Excessive wow, flutter or dropout.	Head, capstan or pinch roller is dirty.	Clean in accordance with instructions shown on page 15.
Incomplete erasure.	Erase head is dirty.	Clean the erase head.
Increased noise or poor reproduction in high frequencies.	Head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies.	Improper setting of the DOLBY NR switch.	When playing back, set the switch to the same position used in recording.
	The unit is placed near a television set	Move the unit away from the television set.
The desired selection cannot be located even though you activate the AMS.	There is noise in the space between selection.	Rerecord the tape if you can, and insert a blank space of four seconds using the ○ button.
	The space is less than four seconds long.	
	The ▶▶ or ◀◀ button is pressed immediately before or after the beginning of the following selection.	—

Noise

Symptom	Cause	Remedy
Hum noise.	The unit is stacked on or under the amplifier.	Separate the units.
Noise is recorded.	Recording was made near equipment such as a television set or a color monitor, and interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from the television set or color monitor.

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